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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,533	09/18/2000	Vernon E. Staton	58299.000004	4644

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EXAMINER

WALLS, DIONNE A

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 03/27/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/664,533	STATON ET AL. <i>Off 4</i>
Examiner	Art Unit	
Dionne A. Walls	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 September 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-29 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of U.S. Patent No. 6,176,970 in view of Schwarz (US. Pat. No. 3,557,589).

U.S. Pat. No. 6,176,970 claims all that is recited in the instant claims, except for reciting a vessel wherein the interior cross-sectional shape being such that the material is subjected to a portion of the explosive forces reflecting off of an interior surface of the lower portion of the vessel. However, Schwarz does disclose an apparatus, used to contain materials that are subjected to explosive forces, having sides surfaces extending at an angle of about 45 degrees, as apparent from Fig. 1. Applicant has stated in the instant specification, page 7, that sloped sides of a vessel reflects shock waves created by explosive force toward the material that is being treated. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel-bottom of Zernow et al by incorporating the angled side-surfaces as

disclosed in Schwarz as a design choice in order to realize a greater volume to carry out the detonation/material-treating process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 13-15, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 6,176,970).

Regarding claims 1,5,15, 27 and 29, Zernow et al discloses an apparatus which performs the method of subjecting material, specifically metal, to explosive forces while being contained in said apparatus. The container is adapted to hold shock wave transmitting medium such as water, said shock waves being formed when conductive material (wire) explodes due to the electrical energy transmitted therethrough. As seen from the planar view in Fig. 2a, the length of the apparatus is greater than the width. While there is not explicit disclosure that the material being subjected to the explosive forces is then removed from the vessel after being subjected to said forces, this is an obvious step that is necessary in order to further handle and utilize the treated material.

While the Zernow may not disclose a vessel wherein the interior cross-sectional shape is such that the material is subjected to a portion of the explosive forces reflecting off of an interior surface of the lower portion of the vessel, Schwarz does disclose an apparatus, used to contain materials that are subjected to explosive forces, having sides surfaces extending at an angle of about 45 degrees, as apparent from Fig. 1. Applicant has stated in the instant specification, page 7, that sloped sides of a vessel reflects shock waves created by explosive force toward the material that is being treated. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel-bottom of Zernow et al by incorporating the angled side-surfaces as disclosed in Schwarz as a design choice in order to realize a greater volume to carry out the detonation/material-treating process.

Regarding claim 2, the material-forming apparatus comprises a container 12 and, as apparent from Fig. 1, a top which is removeably positionable above the bottom of said container.

Regarding claims 3 and 4, as apparent from the figures, the bottom surface of the container is planar (col. 2, lines 36-66).

Regarding claims 13 and 14, while Zernow et al may not explicitly disclose removing material/liquid from the vessel through an opening created by a movable end which is mounted in a groove and slid to an open and closed position to allow material and liquid to be removed, it would have been obvious for one of ordinary skill to have provided the claimed mechanism for removing material because sliding-door arrangements are standard means for removing materials from any vessel, tank or reservoir.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 3,557,589), further in view of Bennett (US. Pat. No. 3,461,698).

While Zernow/Schwarz may not disclose a vessel that is a pipe or a vessel-bottom that is semi-cylindrical, Bennett does disclose an apparatus, used to contain materials that are subjected to explosive forces, having a semi-cylindrical bottom, as required in claim 6. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel-bottom of Zernow/Schwarz by incorporating the semi-cylindrical surface as disclosed in Bennett as a design choice in order to realize a greater volume to carry out the detonation/material-treating process.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 3,557,589), further in view of Orr et al (US. Pat. No. 3,068, 822) and Herring (US. Pat. No. 3,248,917).

Regarding claim 7, while Zernow/Schwarz may not disclose connecting the vessel-bottom to a foundation, Orr et al discloses an high-energy metal forming apparatus having vessel bottom that is secured to a floor/shallow pit (corresponding to the claimed "foundation") (see fig.1). Further, while Zernow/Schwarz may not disclose locking a vessel-top to a connector fixed to said foundation, Herring discloses an apparatus for containing material subject to explosive forces having a top plate 20 which is fitted with a threaded screw (corresponding to the claimed "connector") which is secured to a die 13 (corresponding to the claimed "foundation") (col. 1, lines 65-71; see fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize the connecting and locking means taught in Orr et al

and Herring to serve as means to secure the vessel-top and vessel bottom of Zernow/Schwarz in order to effectively stabilize the vessel while material within the apparatus is being subjected to the explosive forces.

Regarding claim 8, while Zernow /Schwarz/Orr/Herring does not disclose a locking mechanism which comprises the limitations set forth in this claim, it would have been obvious to incorporate any locking mechanism suitable for effectively securing the vessel-top to its foundation while the explosive charges are being detonated.

Claims 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 3,557,589) , further in view of Klein (US. Pat. No. 3,464,249).

Regarding claim 9, while Zernow/Schwarz may not disclose connecting the vessel bottom to a foundation and a lower mounting spring such that the vessel-bottom is resiliently connected to the foundation, Klein discloses an apparatus for explosive treatment of materials, wherein the bottom of the vessel 1 is connected to a foundation 3 and lower springs 18 (col. 3, lines 8-24; see fig. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel bottom of Zernow/Schwarz to include the spring/foundation means of Klein in order to damp the ground waves created by the detonation as taught in Klein (col. 3, lines 19-20).

Regarding claim 10, while Zernow/Schwarz/Klein may not disclose a vessel-bottom having flanges located vertically between upper and lower mounting springs, it would have been obvious to incorporate the claimed mounting spring arrangement, in order to appreciate the benefits of said springs in damping the effects of the explosive forces occurring within the vessel.

Regarding claim 12, while Zernow/Schwarz may not disclose a hole through the vessel-top for venting gas, Klein discloses such a venting mechanism, i.e. an escape tube 5, at the top of the apparatus used for explosive treatment of materials (col. 2, lines 60-62; see fig.1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel-top of Zernow/Schwarz to include the venting mechanism of Klein in order to provide an escape for the detonation gases as taught in Klein (col. 2, lines 60-61). While Zernow/Schwarz/Klein does not explicitly disclose a deflector located inside the vessel-top adjacent the hole, this would have been an obvious enhancement in order to minimize passage of liquid through the hole so as not to soil the area surrounding the vessel.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 3,557,589), further in view of Shrum (US. Pat. No. 4,174,624).

While Zernow/Schwarz may not disclose an apparatus wherein the vessel-bottom is rigidly fixed to a foundation, Shrum discloses a tank or explosive forming wherein the bottom of said tank is fixed to rubber mounting set into concrete around the base of the tank (col. 2, lines 22-38; fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the apparatus of Zernow/Schwarz so that it can be rigidly fixed to a foundation as in Shrum in order to restrain the tank against any tendency for rotational or translational movement as taught in Shrum (col. 2, lines 34-35).

Claims 16-17 and ~~45-46~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in vi w of Schwarz (US.

Pat. No. 3,557,589) , further in view of Seiffert (US. Pat. No. 3,603,127) or Dobson (US. Pat. No. 5,843,535).

While Zernow/Schwarz may not disclose causing explosive forces by discharging a capacitor through an electrode located within the vessel, the energy supplied to said electrode by a capacitor discharge machine attached to said electrode, both Seiffert and Dobson disclose an apparatus for forming workpieces wherein electrodes are positioned within the apparatus and an explosive pulse is generated by discharging a capacitor (Seiffert: col. 2, lines 63-70, see fig. 1; Dobson: col. 3, lines 58-61, see fig.1) Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the detonating means of either Seiffert or Dobson into the apparatus of Zernow/Schwarz in order to effectively subject material to be treated to substantial and effective explosive forces without having to use chemical explosives and because the use of capacitors/electrodes are conventional in many arts.

Claims 18 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwarz (US. Pat. No. 3,557,589) in view of Seiffert (US. Pat. No. 3,603,127) or Dobson (US. Pat. No. 5,843,535) as applied to claims 16 and 45 above, and further in view of Bennett (US. Pat. No. 3,461,698).

While Zernow/Schwartz modified by Seiffert/Dobson may not disclose that the vessel is a pipe, Bennett does disclose an apparatus for metal working with explosives which has a generally cylindrical shape (which corresponds to the claimed "pipe") (see fig. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the vessel-bottom of Zernow/Schwarz and Seiffert/Dobson incorporating a semi-cylindrical surface as disclosed in Bennett as a

design choice in order to realize a greater volume to carry out the detonation/material-treating process.

Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zernow et al (US. Pat. No. 3,228,221) in view of Schwartz (US. Pat. No. 3,557,589).

While the references as combined may not disclose sequentially positioning the vessel-top over each of a plurality of vessel-bottoms, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate these steps for economic reasons, i.e. in order to save money from having to produce more than one vessel top.

Allowable Subject Matter

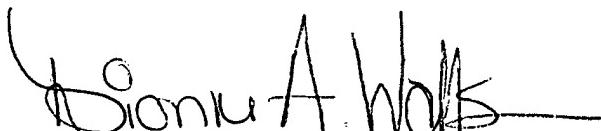
Claims 25, 26 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for allowance is that the prior art of record discloses a method for subjecting metal material in a liquid to explosive forces comprising containing the material/liquid in a vessel with a length being greater than the width, and a lower portion having an interior cross sectional shape perpendicular to the first direction, and such that the material is subjected to a portion of the explosive forces reflecting off of an interior surface of the lower portion of the vessel; subjecting the material and the liquid to explosive forces in the vessel; and removing the material from the vessel. However, it would not have been obvious to one having ordinary skill in the art to modify this method to include subjecting a fibrous/wood product material to explosive forces, or to include Na₂S in the liquid.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne A. Walls whose telephone number is (703) 305-0933. The examiner can normally be reached on Mon-Fri, 7AM - 4:30PM (Every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on (703) 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.


Dionne A. Walls
March 25, 2002


Stanley S. Silverman
Supervisory Patent Examiner
Technology Center 1700